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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,496

09/16/2005

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10400-000151/US

8521

30593 7590 05/30/2008  
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EXAMINER

CARLOS, ALVIN LEABRES

ART UNIT

PAPER NUMBER

3714

MAIL DATE

DELIVERY MODE

05/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,496	<b>Applicant(s)</b> HYLTANDER ET AL.	
	<b>Examiner</b> ALVIN L. CARLOS	<b>Art Unit</b> 3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The following is a Final Office action in response to communications received February 26, 2008. Claims 1, 5, 6, 8, 9, 11, 14, 15, 16, 17 and 18 have been amended and added new claims 21-22. Claims 1-22 are now pending.

### ***Response to Amendments***

2. Applicant's amendments to the claims 5, 11, 15-18 are sufficient to overcome the 35 USC 112, second paragraph, rejection set forth in the previous office action.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 5, 7-8, 11-12, 16, 19 stand rejected under 35 U.S.C. 102(b) as being anticipated by Jacobus 5769640.

Re claim 1, Jacobus teaches a method for generating a virtual anatomic environment for use in a computer based visual simulation of minimally invasive surgery (column 2 lines 22-29), comprising providing a main virtual anatomic environment (column 2 lines 40-43), selecting a local anatomic environment from a predefined library comprising a set of two or more separately modeled local anatomic environments (column 3 lines 57-67), including the selected local anatomic environment in main virtual

anatomic environment to form virtual anatomic environment, thereby allowing generation of different virtual environments (column 4 lines 12-19).

Re claim 2, Jacobus teaches set of local anatomic environments is arranged to represent a set of anatomic variations for a critical internal area, occurring in living beings (column 3 lines 57-67).

Re claim 5, Jacobus teaches the main virtual anatomic environment is arranged to model an internal cavity of a human (column 5 lines 1-6), the set of local anatomic environments is arranged to simulate different arrangements of arteries, veins and ducts around an organ arranged in internal cavity (column 3 lines 57-67).

Re claim 7, Jacobus teaches a device for generating a virtual anatomic environment (column 4 lines 1-4) for use in a computer based visual simulation of minimally invasive surgery comprising a modeling device for providing a main virtual anatomic environment (column 5 lines 7-9), a library comprising a set of two or more separately modeled local anatomic environments (column 5 line 67 and column 6 line 1), means for incorporating one of the local anatomic environments of the library into the main virtual anatomic environment together forming virtual anatomic environment, thereby allowing generation of different virtual environments (column 5 lines 31-35).

Re claim 8, Jacobus teaches a selection device for selecting one of local anatomic environments from library to be included in virtual anatomic environment (column 5 lines 20-22).

Re claim 11, Jacobus teaches the main virtual anatomic environment is arranged to model an internal cavity of a human (column 5 lines 1-6), the set of local anatomic

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environments is arranged to simulate different arrangements of arteries, veins and ducts around an organ arranged in internal cavity (column 3 lines 57-67).

Re claim 12, Jacobus teaches a computer-based minimal-invasive surgery simulation system comprising a device for generating a virtual anatomic environment (column 4 lines 1-4).

Re claim 16, Jacobus teaches the main virtual anatomic environment is arranged to model an internal cavity of a human (column 5 lines 1-6), the set of local anatomic environments is arranged to simulate different arrangements of arteries, veins and ducts around an organ arranged in internal cavity (column 3 lines 57-67).

Re claim 19, Jacobus teaches a computer-based minimal-invasive surgery simulation system comprising a device for generating a virtual anatomic environment (column 4 lines 1-4).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-4, 6, 9-10, 13-15, 17-18, 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobus 5769640 in view of Ramshaw 5791907.

Re claim 3, Jacobus teaches the invention as discussed above.

However, Jacobus fails to teach the following claimed limitations as taught by Ramshaw: the step of randomly selecting one of the local anatomic environments in the library (column 17 lines 9-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacobus's invention in view of Ramshaw in order to provide a low-cost medical educational and training device providing an interactive user environment as taught by Ramshaw (column 2 lines 50-52).

Re claim 4, Jacobus teaches the invention as discussed above.

However, Jacobus fails to teach the following claimed limitations as taught by Ramshaw: the probability of randomly selecting a certain local anatomic environment essentially corresponds with the degree of occurrence of that local anatomic environment in living beings (column 17 lines 25-31).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacobus's invention in view of Ramshaw in order to provide a low-cost medical educational and training device providing an interactive user environment as taught by Ramshaw (column 2 lines 50-52).

Re claim 6, Jacobus teaches the invention as discussed above.

However, Jacobus fails to teach the following claimed limitations as taught by Ramshaw: Selecting a certain local anatomic environments from the library and including it into main virtual anatomic environment by user selection (column 17 lines 25-31).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacobus's invention in view of Ramshaw in order to provide a low-cost medical educational and training device providing an interactive user environment as taught by Ramshaw (column 2 lines 50-52).

Re claim 9, Jacobus teaches the invention as discussed above.

However, Jacobus fails to teach the following claimed limitations as taught by Ramshaw: randomly select one of local anatomic environments from the library to be included in virtual anatomic environment (column 17 lines 9-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacobus's invention in view of Ramshaw in order to provide a low-cost medical educational and training device providing an interactive user environment as taught by Ramshaw (column 2 lines 50-52).

Re claim 10, Jacobus teaches the invention as discussed above.

However, Jacobus fails to teach the following claimed limitations as taught by Ramshaw: randomly select one of local anatomic environments in a way that the probability of selecting a certain local anatomic environment essentially corresponds with the degree of occurrence of that local anatomic environment in human beings (column 17 lines 25-31).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacobus's invention in view of Ramshaw in order to provide a low-cost medical educational and training device providing an interactive user environment as taught by Ramshaw (column 2 lines 50-52).

Re claim 13, Jacobus teaches the invention as discussed above.

However, Jacobus fails to teach the following claimed limitations as taught by Ramshaw: the step of randomly selecting one of the local anatomic environments in the library (column 17 lines 9-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacobus's invention in view of Ramshaw in order to provide a low-cost medical educational and training device providing an interactive user environment as taught by Ramshaw (column 2 lines 50-52).

Re claims 14 and 15, Jacobus teaches the invention as discussed above.

However, Jacobus fails to teach the following claimed limitations as taught by Ramshaw: Selecting a certain local anatomic environments from the library and including it into main virtual anatomic environment by user selection (column 17 lines 25-31).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacobus's invention in view of Ramshaw in order to provide a low-cost medical educational and training device providing an interactive user environment as taught by Ramshaw (column 2 lines 50-52).

Re claims 17-18, Jacobus i.v., Ramshaw teaches the invention as discussed above. Furthermore, Jacobus teaches the main virtual anatomic environment is arranged to model an internal cavity of a human (column 5 lines 1-6), the set of local anatomic environments is arranged to simulate different arrangements of arteries, veins and ducts around an organ arranged in internal cavity (column 3 lines 57-67).

Re claim 20, Jacobus i.v., Ramshaw teaches the invention as discussed above. Furthermore, Jacobus teaches a computer-based minimal-invasive surgery simulation system comprising a device for generating a virtual anatomic environment (column 4 lines 1-4).

7. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobus 5769640 in view of Ramshaw 5791907.

Re claim 21, Jacobus i.v., Ramshaw teaches the invention as discussed above. Furthermore, Jacobus teaches components included in the local anatomic environment are excluded in the main virtual anatomic environment (column 4 lines 1-38).

Re claim 22, Jacobus i.v., Ramshaw teaches the invention as discussed above. Furthermore, Jacobus teaches components included in the local anatomic environments are excluded in the main virtual anatomic environment (column 4 lines 1-38).

### ***Response to Arguments***

8. Applicant's arguments filed February 26, 2008 have been fully considered but they are not persuasive.

9. The Examiner reminds that it is the Applicant responsibility to read the entire disclosure of the prior art cited for rejections including the pertinent references cited.

10. In response to applicant's arguments that Jacobus does not teach selecting a local anatomic environment from a predefined library comprising a set of two or more separately modeled local anatomic environments including the selected local anatomic environment in said main virtual anatomic environment to form said virtual anatomic

environment. The Examiner disagrees. Jacobus positively teaches a method and an apparatus consists of a two or three dimensional display device, a two or three dimensional sound device, a graphics/image processing engine and storage module capable of real-time medical image generation, and programmable tactile/force reflecting mechanisms which can generate the "feel" of medical instruments and the interaction of these instruments with the anatomical simulation. In addition, Jacobus teaches a method and an apparatus used to provide realistic simulations of patients on which to practice medical procedures for training and qualification purposes, to provide a means for trainees to see and feel actual (or simulated) surgeries, to display information from previously obtained medical diagnostics or image modalities to the surgeon overlaid on current image information during the surgery, and to provide the man-machine interface for robotic surgery (column 4 lines 1-38). Therefore, Jacobus inherently teaches separately modeled local anatomic environments including the local anatomic environment in main virtual anatomic environment.

11. In response to applicant's arguments that Jacobus does not teach library that including separately modeled local anatomic environments. The Examiner disagrees. Jacobus positively teaches a method and an apparatus consists of a two or three dimensional display device, a two or three dimensional sound device, a graphics/image processing engine and storage module capable of real-time medical image generation, and programmable tactile/force reflecting mechanisms which can generate the "feel" of medical instruments and the interaction of these instruments with the anatomical simulation (column 4 lines 1-38). Therefore, Jacobus inherently teaches plurality of

libraries or databases of a graphics/image processing engine and storage module capable of specific real-time medical image generation and anatomical simulation.

12. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

13. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. **See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).**

### ***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALVIN L. CARLOS whose telephone number is (571)270-3077. The examiner can normally be reached on 7:30am-5:00pm EST Mon-Fri (alternate Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on (571)272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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